WHAT IS CLAIMED IS:

1.   A control device for controlling a cluster
operation of a plurality of devices, comprising:

        a restoring portion for restoring a device in an
energy saving state to a stand-by state, if the number
of devices in the stand-by state is smaller than a
required number of devices for the cluster operation;
and

        a distribution portion for distributing a job to
each device, if a sum of the number of devices in the
stand-by state and the number of devices restored to
the stand-by state by said restoring portion reaches
said required number.

2.   The control device according to claim 1, wherein
said restoring portion sets up a device restored from
the energy saving state to the stand-by state in
accordance with the specified restoring conditions.

3.   The control device according to claim 2, wherein
said restoring conditions include a warm-up time for
the device to return to the stand-by state, and/or the
last operation time and/or the functions provided for
the device.

4.   A control device for controlling a cluster
operation of a plurality of devices, comprising:

a selecting portion for selecting an insufficient number of devices from among the devices in an energy saving state, if the number of devices in a stand-by state is less than a required number of devices for the

5   cluster operation; and

a distribution portion for distributing a job to each device already in the stand-by state and each device in the energy saving state that is selected by said selecting portion.

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5.   The control device according to claim 4, wherein said distribution portion distributes the job so that a less amount of job to each device in the energy saving state that is selected by said selecting portion is

15   allocated than the amount of job to each device already in the stand-by state.

6.   The control device according to claim 4, wherein said distribution portion distributes the job to said

20   each device on the basis of the time for which the device in the energy saving state that is selected by said selecting portion gets to the stand-by state.

7.   A network system having connected the control

25   device according to claim 1 and a multi-function device for performing the cluster operation under the control of said control device.

8.   A control method for controlling a cluster
operation of a plurality of devices, comprising:

       a restoring step of restoring a device in an
5   energy saving state to a stand-by state, if the number
of devices in the stand-by state is smaller than a
required number of devices for the cluster operation;
and

       a distribution step of distributing a job to each
10   device, if the sum of the number of devices in the
stand-by state and the number of devices restored to
the stand-by state at said restoring step reaches said
required number.

15   9.   The control method according to claim 8, wherein
said restoring step sets up a device restored from the
energy saving state to the stand-by state in accordance
with the specified restoring conditions.

20   10.   The control method according to claim 9, wherein
said restoring conditions include a warm-up time for
the device to return to the stand-by state, and/or a
last operation time and/or a functions provided for the
device.

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11.   A control method for controlling a cluster
operation of a plurality of devices, comprising:

a selecting step of selecting an insufficient number of devices from among the devices in an energy saving state, if the number of devices in a stand-by state is less than a required number of devices for the

5   cluster operation; and

a distribution step of distributing a job to each device already in the stand-by state and each device in the energy saving state that is selected at said selecting step.

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12.   The control method according to claim 11, wherein said distribution step distributes the job so that a less amount of job to each device in the energy saving state that is selected at said selecting step is

15   allocated than the amount of job to each device already in the stand-by state.

13.   The control method according to claim 11, wherein said distribution step distributes the job to said each

20   device on the basis of the time for which the device in the energy saving state that is selected at said selecting step gets to the stand-by state.

14.   A computer program for controlling the cluster

25   operation of a plurality of devices, which runs on a computer, comprising:

a restoring step code for restoring a device in

an energy saving state to a stand-by state, if the number of devices in the stand-by state is less than a required number of devices for the cluster operation; and

5   a distribution step code for distributing a job to each device, if the sum of the number of devices in the stand-by state and the number of devices restored to the stand-by state at said restoring step reaches said required number.

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15. The computer program according to claim 14, wherein said restoring step sets up a device restored from the energy saving state to the stand-by state in accordance with the specified restoring conditions.

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16. The computer program according to claim 14, wherein said restoring conditions include a warm-up time for the device to return to the stand-by state, and/or the last operation time and/or the functions

20 provided for the device.

17. A computer program for controlling the cluster operation of a plurality of devices, which runs on a computer, comprising:

25   a selecting step code for selecting an insufficient number of devices from among the devices in an energy saving state, if the number of devices in

a stand-by state is less than a required number of devices for the cluster operation; and

a distribution step code for distributing a job to each device already in the stand-by state and each device in the energy saving state that is selected at said selecting step.

18. The computer program according to claim 17, wherein said distribution step distributes the job so that the allocation of job to each device in the energy saving state that is selected at said selecting step is less frequent than the allocation of job to each device already in the stand-by state.

19. The computer program according to claim 18, wherein said distribution step distributes the job to said each device on the basis of the time for which the device in the energy saving state that is selected at said selecting step gets to the stand-by state.

20. A computer readable storage medium for storing the computer program according to claim 14.

21. A network device in which a cluster operation can be realized in cooperation of a plurality of network devices, comprising:

a determination portion for determining whether

or not the cluster operation is running if the conditions for transferring to an energy saving state are met; and

a state transfer portion for transferring to the energy saving state in accordance with an instruction from an external device, irrespective of said conditions, if it is determined that the cluster operation is running.

22. A control method for a network device in which the cluster operation can be realized in cooperation of a plurality of network devices, comprising:

a determination step of determining whether or not the cluster operation is running if the conditions for transferring to an energy saving state are met; and

a state transfer step of transferring to the energy saving state in accordance with an instruction from an external device, irrespective of said conditions, if it is determined that the cluster operation is running.

23. A computer program for controlling a network device in which the cluster operation can be realized in cooperation of a plurality of network devices, comprising:

a determination step code for determining whether or not the cluster operation is running if the

conditions for transferring to an energy saving state
are met; and

a state transfer step code for transferring to
the energy saving state in accordance with an
5   instruction from an external device, irrespective of
said conditions, if it is determined that the cluster
operation is running.

24. A computer readable storage medium for storing
10   the computer program according to claim 23.

25. A control device for controlling the cluster
operation with the network device according to claim 21,
comprising:
15   a determination portion for determining whether
or not the conditions for transferring the network
device in the cluster operation to an energy saving
state are met; and

a state transfer portion for transferring said
20   network device to an energy saving mode by determining
said network device to be transferred to the energy
saving state if said conditions are met.

26. The control device according to claim 25, wherein
25   the conditions determined by said determination portion
include the elapse time from the stop of the cluster
operation exceeding a predetermined time, and said

state transfer portion transfers preferentially a device with longer stand-by time to the energy saving state.

5   27.   The control device according to claim 25, wherein the conditions determined by said determination portion include the elapse time from the stop of the cluster operation exceeding a predetermined time, and said state transfer portion transfers preferentially a

10   device with shorter lifetime to the energy saving state.

28.   The control device according to claim 25, wherein the conditions determined by said determination portion include the elapse time from the stop of the cluster

15   operation exceeding a predetermined time, and said state transfer portion transfers preferentially a device with shorter transfer time to the stand-by state to the energy saving state.

20   29.   A control method for controlling the cluster operation with the network device according to claim 21, said control method comprising:
         a determination step of determining whether or not the conditions for transferring the network device

25   in the cluster operation to an energy saving state are met; and
         a state transfer step of transferring said

network device to the energy saving mode by determining said network device to be transferred to the energy saving state if said conditions are met.

5   30.   The control device according to claim 25, wherein the conditions determined at said determination step include the elapse time from the stop of the cluster operation exceeding a predetermined time, and said state transfer step comprises transferring

10   preferentially a device with longer stand-by time to the energy saving state.

31.   The control device according to claim 25, wherein the conditions determined at said determination step

15   include the elapse time from the stop of the cluster operation exceeding a predetermined time, and said state transfer step comprises transferring preferentially a device with shorter lifetime to the energy saving state.

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32.   The control device according to claim 25, wherein the conditions determined at said determination step include the elapse time from the stop of the cluster operation exceeding a predetermined time, and said

25   state transfer step comprises transferring preferentially a device with shorter transfer time to the stand-by state to the energy saving state.

33. A computer program for controlling the cluster operation with the network device according to claim 21, comprising:

5   a determination step code for determining whether or not the conditions for transferring the network device in the cluster operation to an energy saving state are met; and

    a state transfer step code for transferring said
10 network device to an energy saving mode by determining said network device to be transferred to the energy saving state if said conditions are met.

34. The computer program according to claim 33,
15 wherein the conditions determined at said determination step include the elapse time from the stop of the cluster operation exceeding a predetermined time, and said state transfer step comprises transferring preferentially a device with longer stand-by time to
20 the energy saving state.

35. The computer program according to claim 33, wherein the conditions determined at said determination step include the elapse time from the stop of the
25 cluster operation exceeding a predetermined time, and said state transfer step comprises transferring preferentially a device with shorter lifetime to the

energy saving state.

36.   The computer program according to claim 33,
wherein the conditions determined at said determination
step include the elapse time from the stop of the
cluster operation exceeding a predetermined time, and
said   state   transfer   step   comprises   transferring
preferentially a device with shorter transfer time to
the stand-by state to the energy saving state.

37.   A computer readable storage medium for storing a
computer program according to claim 33.

38.   A computer readable storage medium for storing
the computer program according to claim 17.